WHAT IS CLAIMED IS:

1.   A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means; and

an object rotating means for rotating the three-dimensional object on the basis of the result of determination supplied from the determination means.

2.   The apparatus as set forth in claim 1, wherein the determination means determines the axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen.

3.   The apparatus as set forth in claim 2, wherein the determination means further determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen, and the object rotating means rotates the three-dimensional object at the determined speed.

4.   The apparatus as set forth in claim 1, wherein the determination means determines an axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate

detecting means and the three-dimensional object on the display screen.

5.   The apparatus as set forth in claim 4, wherein the determination means determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen, and the object rotating means rotates the three-dimensional object at the determined speed.

6.   A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen; and

an object moving means for moving the three-dimensional object on the basis of the result of determination supplied from the determination means.

7.   The apparatus as set forth in claim 6, wherein the determination means determines a moving speed on the basis of a distance between the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen, and the object rotating means moves the three-dimensional object at the determined speed.

8.   A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining whether the three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means; and

an object scale-up/-down means for scaling up or down the three-dimensional object on the basis of the result of determination supplied from the determination means.

9.   A three-dimensional object manipulating method in which a display unit, data processor and a coordinate detector which detects a coordinate defined on the display screen by a user's touch are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

determining, under control of the data processor, an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detector; and

rotating, under control of the data processor, the three-dimensional object on the basis of the result of determination.

10.   The method as set forth in claim 9, wherein the data processor determines the axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detector and a

central coordinate on the display screen.

11. The method as set forth in claim 10, wherein the data processor further determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detector and a central coordinate on the display screen, and rotates the three-dimensional object at the determined speed.

12. The method as set forth in claim 9, wherein the data processor determines an axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detector and the three-dimensional object on the display screen.

13. The method as set forth in claim 12, wherein the data processor further determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detector and barycentric coordinate of the three-dimensional object on the display screen, and rotates the three-dimensional object at the determined speed.

14. A three-dimensional object manipulating method in which a display unit, data processor and a coordinate detector which detects a coordinate defined on the display screen by a user's touch are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

determining, under control of the data processor, a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detector; and

moving, under control of the data processor, the three-dimensional object on the

basis of the result of determination.

15. The method as set forth in claim 14, wherein the data processor further determines a moving speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detector and barycentric coordinate of the three-dimensional object on the display screen, and moves the three-dimensional object at the determined speed.

16. A three-dimensional object manipulating method in which a display unit, data processor and a coordinate detector which detects a coordinate defined on the display screen by a user's touch are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

determining, under control of the data processor, whether the three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by the coordinate detector; and

scaling up or down, under control of the data processor, the three-dimensional object on the basis of the result of determination.

17. A computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch; and

an object rotating means for rotating the three-dimensional object on the basis of the result of determination supplied from the determination means.

18.   A computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch and barycentric coordinate of the three-dimensional object on the display screen; and

an object moving means for moving the three-dimensional object on the basis of the result of determination supplied from the determination means.

19.   A computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining whether the three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch; and

an object scale-up/-down means for scaling up or down the three-dimensional object on the basis of the result of determination supplied from the determination means.